VOL. X NO. 10

Entomological News

Feniseca tarquinius
Chrysalis (enlarged)

DECEMBER, 1899.

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PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE

1899

Entered at the Philadelphia Post Office as Second Class Matter.

Entomological News

published monthly, **excepting July and August,** in charge of the Entomological Section of the Academy of Natural Sciences, Philadelphia, and the American Entomological Society.

Annual Subscription, $1.00, in advance,

Outside of the United States and Canada, $1.20.

Advertising Rates: 30 cents per square inch, single insertion; a liberal discount on longer insertions. No advertisement taken for less than 60 cents. Cash in advance.

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ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. X. DECEMBER, 1899. No. 10

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SOME TETTIGIAN STUDIES.

By J. L. HANCOCK.

In Prof. Ignacio Bolivar's Essay, '87, there is collectively brought together under the genus *Paratettix* a number of species which I have found necessary to revise. We find in the disposition of species there are three sections, the first, page 270, being separated from the rest of the series by the characters of the posterior tarsi, as follows: Section one, first and third articles of the posterior tarsi equal in length, under which two species are thus grouped, namely: *Paratettix peruvianus* Bol. and *Paratettix cayennensis* Bolivar.

These two species belong to the same category as the new species described here and they form a distinct genus, to which I have given the new name, *Allotettix*, the type being *prolongatus*. They, moreover, approximate the *Metrodoræ*, instead of the *Tettigiæ*, and are in consequence dropped from the original *Para'eltix* series entirely.

It is but proper to state that my esteemed colleague, Prof. Bolivar, in a communication to me recognized that a change, such as I have effected, would probably be necessary, but the

species which is described as *Allotettix prolongatus* he identified as the same as his *peruvianus*. The latter is quite unlikely, as a careful comparison will show.

Al'otettix, gen. nov.

Body rugose, tuberculate, face oblique, as seen in front, narrow. Vertex narrower than an eye, middle carinate, sulcate on either side, the crown very short, the vertex on a higher plane than the occiput, which slopes backwards, and in front not advanced to the anterior border of the eyes; in profile not visible. Anteriorly subtruncate, passing laterally into little short convexed flexures. Eyes prominent. Frontal costa narrowly divided. Antennæ inserted a little below the anterior inferior border; filiform rather short, consisting of fourteen articles, the superior ocelli scarcely perceptible in profile at the middle of the anterior border of the eyes. Pronotum depressed, truncated in front, strongly prolongated posteriorly, ending in a sharp apical process, median carina scarcely elevated, humeral angles obtuse, posterior median lobule of lateral lobes feebly developed, the subhumeral sinus shallow, the posterior angle directed obliquely downward and backwards. Elytra elongate The first and third articles of the posterior tarsus about equal in length.

Allotettix prolongatus, sp. nov.

Body strongly prolongate, rugose tuberculate, fuscus, narrow, above depressed, tibiæ annulated with flavus. Vertex a little narrower than an eye, subnarrowed in front, feebly carinated in the middle, on either side sulcate, anteriorly subtruncate, passing laterally into little convexed flexures, ending abruptly near the anterior inner border of the eye; not advanced as far as the anterior border of the eye, in profile not visible, being obscured by the prominent eyes; frontal costa depressed between the eyes, a little protuberant opposite the antennæ, about on a line with their anterior border, the forks as seen in front gradually but narrowly separated, diverging to the middle ocellus. Pronotum anteriorly truncate, posteriorly strongly prolongate, subulate and acuminate, frequently extending within one millimeter of twice the length of the posterior femora, median carina scarcely elevated, sinuate more or less tuberculate in its backward course, dorsum between the shoulders a little unevenly swollen, rugose papillate, just behind strongly depressed, dorsal surface of the apical process rugose, uneven and covered with numerous longitudinal tuberculæ, lateral angles obtuse, posterior angle of the lateral lobe obtuse, rounded. Elytra elongate, impresso-punctate, with the apex subacutely rounded; wings about as long as the process or scarcely longer. Femoræ unmodified, slender, the posterior femora narrow, the carinæ of tibia with rather small and scarcely more than five or six spines, on the inner carinæ as few as three or four beyond the middle; the first article of the

posterior tarsus equal in length to the third, the first and second pulvilli united about equal to the third, the first and second acute, the third straight below.

Length body, 12–13mm., pronot. 16 17½mm., post. fem., 7-7.5mm.

Locality, Bolivia, South America. Hancock.

Allotettix peruvianus, Bol.

Obscure, ferrugineus, fusco variegated. Vertex nearly as wide as an eye, horizontal, anteriorly submarrowed, in front scarcely transversely carinated; frontal costa between the antennæ obliquely depressed, obscurely sinuate. Pronotum posteriorly long and subulate, median carina between the shoulders sinuate, between the shoulders with concavities, posterior angle of the lateral lobe with the apex widely rounded. Elytra oblong, subacuminate; wings as long as the process. Femoral carina unchanged, first article of the posterior tarsi not longer than the third, third pulvillus shorter the second and first united, first pulvillus with the apex shortly spined and acute.

Length of body, ♂♀ 9 13.5mm., pronot., 13.5-14mm., post. fem. 5.5-7mm.

Locality—Pumamarco, Peru, Museum of Varsovie. Bolivar.

Allotettix cayennensis, Bol.

Pale fuscus, rugulose, vertex narrower than an eye, not produced in front of the eyes, middle carinated, lateral lobes externally rounded; frontal costa between the eyes little sinuate. Pronotum narrow, posteriorly long and subulate, in front of the shoulders, crowded together, median carina a little elevated, between the shoulders subsinuate. Elytra narrowly rounded at the apex. Carinæ of the femora undulate, crenulate, posterior femora elongate, before the apex reduced, first and third articles of the posterior tarsi nearly equal in length, apical pulvillus acute, the third pulvillus scarcely shorter than the second and first united. Valves of the ovipositor rather short.

Body length, ♀, 8mm., pronot., 10mm., post. fem., 5.5mm.

Locality, Cayenne (Coll. of M. Brunner). Bolivar.

Among some Tettigidæ received from Mexico, through the kindness of Mr. O. W. Barrett, I am able to record a new and very interesting species of *Neotettix* Hancock.

Neotettix barretti, sp. nov.

Body small, rugose-granulate. Vertex fully twice the width of an eye, anterior border convexed and advanced considerably in front of the eyes, middle carinate, projecting a little in front and ending backwards at a line drawn across the anterior third of the eyes, feebly sulcate or rather depressed on either side, mammilate posteriorly; frontal costa straight and subvertical, the apex rounded angulate, seen in front the frontal costa strongly forked, the branches starting opposite the middle of the eye, suddenly diverging in their de-

scension, being farther apart between the antennæ where they are parallel, tending to slight convergence at the median ocellus. Antennæ very short, filiform and consisting of twelve articles They originate as seen in profile at a point a little below and in front of the anterior inferior border of the eye. The posterior ocelli are plainly visible a little in front of the middle of the eyes, midway between the anterior margin of the frontal costa and the eyes, Pronotum anteriorly truncate, the anterior margin of the dorsum crowded forward over the head, a little constricted in front of the shoulders, tectiform, rugose, a little broadened, the humeral angles obtuse, angulate, carinated, the little anterior lateral, carinæ prominent, median carina of the pronotum strongly elevated, thin, straight above, roundly curving near the anterior border, posterior angle of the lateral lobes widely and obtusely angulate. Elytra narrow, apex subacutely rounded, wings not visible. Anterior femora compressed below, with a small drawn out lobe, ending near the apex : middle femora compressed above, obscurely undulate, inferiorly undulate, with a little median prominence; posterior femora large, the first article of the posterior tarsi exceedingly long, being a third longer than the last article; pulvilli inconspicuous, the first small, the second and third longer and nearly equal in length.

♂. Body length, 7mm., pronot. 7mm., post fem. 4 55m

Locality, Tizapan, D. F., Mexico. O. W. Barrett.

Named in honor of Mr. Barrett, who found this very interesting species.

The vertex is more produced in front of the eyes in this species than any other species of *Neotettix* with which I am familiar. In a series of specimens from Minnesota, which I have been able to examine through the generosity of Prof. Otto Lugger, there was a single specimen of *Nomotettix* Morse, which though nearly allied to *Nomotettix cristatus* Harris, has some distinguishing characters which seem sufficiently pronounced to separate the species, and which I herewith set forth.

Nomotettix sinufrons, sp. nov.

Body granulate, rugose. Vertex very wide, equal to about twice the width of an eye; middle rather feebly carinate, shallowly sulcate on either side of the median ridge, front border broadly but roundly curved, the mid-carina very little projecting, in profile strongly produced in front of the eyes; frontal costa sinuate opposite the middle of the eyes, protuberant between the antennæ, dorsum of the pronotum anteriorly acute angulate, a little produced over the head, posteriorly subulate, between the shoulders strongly tectiform, behind on the dorsum with a number of

oblique wrinkles, median carina prominent, cristate, depresso convexed, humeral angles obtuse. Elytra narrow, apex subacuminate, wings not reaching to the end of the apical process. Femoræ unchanged; posterior femora large, the first article of the posterior tarsi much longer than the third, strongly serrulate above, pulvilli straight below.

♀, Body length, 9 5mm., pronot. 8.5, post. fem. 6mm.

Locality, St. Anthony Park, Minnesota. Prof Otto Lugger.

This pecies is nearly allied to *N. cristatus* Harris, differing from that species principally in the pronotum not being so strongly compressed above, the sinuation not so deep in front of the eyes, the frontal costa more advanced in front of the eyes, the vertex more obtusely conico-angulate. In *N. crustatus* the frontal costal is more deeply excavate and the median carina of the vertex more elevated, giving the crown of the head in profile a more arched appearance. Although described from one specimen, these differences are such as to warrant me without hesitancy in giving this species a place here.

Another point which I would like to bring forward in the present connection is in regard to *Tettix granulatus* Kirby. This species is undoubtedly the same as described by Prof. Bolivar in his Essay, '87, page 266, figs. 22-22a, as *Tettix brunneri*, making the latter name synonymous, but on the other hand this is not the species commonly understood as *Tettix granulatus*, found in the northeastern United States and southward, which has a slender form with long subulate pronotum. On the contrary, the true *granulatus* has the body compact, rather large, the wings only extending as far as the apical process, as more fully described below. The result of these researches leaves no other way open but to name the species further southward or in the temperate region, and to make my contention more clear I have described the two species in question.

Tettix granulatus Kirby.

Syn, **Tettix brunneri** Bol.

Body granulate, fusco testaceus, above frequently with two black spots. Vertex wider than the eye, middle strongly carinated, quite deeply sulcate on each side, anteriorly obtuse angulate, the facial frontal costal widely sulcate, the branches running sub-parallel, slightly widening at the middle ocellus in profile, the median carina of vertex curved above the eyes; in front opposite the middle of the

eye the frontal costa is shallowly sinuate. Pronotum truncate posteriorly subulate, apex slightly passing the posterior femor, dorsum tectiform, broad between the shoulders, the median carina distinctly elevated, percurrent, near the front margin more compressed, humeral angles obtuse, carinated, the little anterior lateral carina distinct and parallel. Elytra oblong, apex rounded, impresso-punctated, wings extended almost as far or to the apex of the process Anterior femora obscurely undulate, middle femora unchanged, the posterior femora rather slender, becoming considerably narrower near the apex; carina straight crenulate, the first article of the posterior tarsus above finely serulate, very much longer than the last two united, the pulvilli below straight, the first quite small, the second about twice as long as the first, the third as long as the first two united.

Body length, ♂ ♀, 9.12mm., pronot., 10-12mm., post. fem., 5 5-6mm. Bolivar.

The specimen before me measures: Body, ♀ 11mm., pronot, 10 5, post. fem., 6mm.

Locality. Hudson Bay. Bolivar.

For the specimen above mentioned in my collection I am indebted to Prof. Bolivar, of Madrid, Spain.

A specimen is said to have been taken in latitude 65° and White found specimens on the borders of the Mackenzie and Slave Rivers, and at Fort Simpson. Bethune relates that this is the species found in New England States and Minnesota, but this is an error. This species is closely related to *Tettix incurvatus* Hancock and *Tettix bipunctatus* of Europe. The latter is much smaller in stature, the median carina proportionately more cristate, approaching *Nomotettix* and the frontal costa of the face is not sinuate. For specimens of the latter species in my collection I am indebted to Mr. Malcolm Burr, of East Grinstead, England. The bibliography of *Tettix granulatus*, as above described, is as follows: Kirby, Fauna, Bor. Amer. IV, p. 251; DeHann, Bijdr. Kenn, Orthopt, 143; White, Rich. Arct. Search, Exp. II, 360; Bethune, Kirby's Fauna, Bor. Amer. Insects, p. 121; Bolivar, Essai s. l. Acrid, tribu, Tettig, Amer Soc. Ent. Belgique, p. 266, figs. 22-22a.

Tettix morsei, sp. nov.

Syn. Tettix granulatus Kirby.

Body granulate or very little rugose, slender, polyornate. Vertex considerably wider than an eye, middle carinate, on each side sulcate from the middle of the eye to the anterior margin, obtuse angulate in front, the median carina not projecting beyond the apex,

in profile angulate produced, the crown substraight showing a little above the eyes; facial frontal costal strongly in advance of the eyes, as seen in front bifurcating near the apex, the branches gradually and but little diverging in their descension, slightly depressed opposite the eyes. Face strongly oblique, the posterior ocelli showing just in front of the middle anterior margin of the eye. Antennæ short, not reaching to the humeral angle. Pronotum anteriorly truncate or barely angulate, the dorsum tectiform, not very broad between the shoulders, median carina distinctly elevated percurrent, nearly straight, sometimes rather undulating, a little more elevated near the anterior border, posteriorly long, slender, subulate, passing considerably beyond the posterior femora, humeral angles, strongly obtuse or subrounded. Wings well developed, passing beyond the apical process, posterior angle of the lateral lobes very slightly and obliquely diverging, strongly obtuse. Elytra oblong, apex subacutely rounded external surface minutely punctate. Anterior femora slender, unchanged, middle femora slender, unchanged, middle femora with straight carinæ, the posterior rather slender, very much reduced near the apex, the first article of the posterior tarsus but little longer than the other two united, the pulvilli straight below, the first acute, the second about twice as long as the first, the third as long as the first two united

Body length, ♂ ♀, 8 10mm, pronot., 11-12 5mm., post. fem., 5.5-6mm.

This is the common form found in most collections. A specimen from Northern Illinois in the collection of Mr. A. Bolter, of Chicago, measured sixteen millimeters in total length, this being the maximal size of any examined.

A series of specimens from St. Anthony Park, Minnesota, showed some departure from the type form. There was variation in the angularity of the vertex, some being very obtuse; the median carina of the pronotum, instead of being straight, was undulating in its backward course, the dorsum was decidedly rugose, the posterior tarsus with the first article a little longer than the last two united, the pulvilli straight below, the first conico-acute, the second and third equal in length were a little longer than the first. In this variety we see an approach to *Tettix luggeri* Hancock.

Var. 2. Abbreviated examples with the pronotum not extending so far backwards, the wings being coincidently shorter.

The species above described is named in honor of my friend and co-worker, Prof. A. P. Morse.

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THE CATOCALAE OF MONTGOMERY COUNTY, VIRGINIA.

By Prof. Ellison A. Smyth, Jr.

The interesting commingling of Northern and subtropical forms in the Lepidoptera of the Alleghanian fauna is well illustrated in the *Catocalæ* of this county. The following notes apply to the immediate neighborhood of Blacksburg, Montgomery County, Virginia, among the Alleghanies and at an elvation of about 2,300 feet.

As far as my observations extend, based upon my own collecting for a number of years, there are twenty-seven good species of *Catocalæ*, or, counting varietal forms, nearly forty species and varieties found here. More strictly Northern are such species as *C. parta*, *concumbens*, *habilis*, *paleogama*, etc., while the following Southern forms occur: *C. viduata* Gn. (*mæstosa* Halst.), *desperata* Gn., *lachrymosa* and *sappho*. The past summer was the first occasion of my finding *viduata* here. This species was frequent, though not abundant; and it was with intense surprise that I eagerly bottled two specimens of *C. sappho*, which I had heretofore seen only once alive, in lower South Carolina. How these two species took me back to my old collecting grounds, in the swamps near Charleston, S. C.,

where the cypress and gray moss made a twilight at midday, where Swainson's warbler hopped among the cane and the Anhinga birds soared over the black pools, and where *Catocala carissima* spread her gorgeous wings, as she flew from the brown bark of the pine trunks, or from the flat earth masses torn up by the roots of some prostrated tree known as a "hurricane root."

The following are the species caught here:

Catocala nubilis Hbn. Very common; appearing late in May. One of the few *Catocalæ* pitching readily upon grass or weeds, of any description; comes readily to light.

C. clonympha Hbn. Apparently rare. I have taken it but once, in daylight, resting on oak. Very abundant in lower South Carolina.

C. messalina Gn. Only one specimen, taken at light.

C. amica. This and its varieties very common, usually on oak trees. It has a curious habit, when startled, of flying around to the opposite side of the same tree, and, when followed, of repeating the performance, unless captured, again and again, getting higher and higher, until out of reach, but seldom flying off to another tree.

C. minuta Edw. Only one specimen, taken at light.

C. grynea Cr. Not common; occasionally taken at light.

C. micronympha Gn. Not common; a few taken on trunks and among branches and leaves of hawthorn and small "wild goose" plum trees. I have never seen it on trunks of larger trees.

C. cratægi Saund. A few taken at light and among *crataegus.*

C. ultronia Hbn. Common in thickets of wild plum, on which trees the larvæ feed.

C. ilia Cr. Quite common in its various varieties; have seldom seen two alike; frequently starts off before the tree is closely approached; is started readily by rapping; shows a preference for dense thickets of small trees, and lights in brush heads as well as on large trees; when once startled it is very wary and must be approached with great caution, equaling *C. lachrymosa* in this respect. In the South the larvæ feed on live oak.

C. parta Gn. Late in September several years ago I took a few on oak trunks; have not seen it since.

C. concumbens Walk. Apparently very rare. Only one taken in daylight in oak woods.

C. cara Gn. Also very rare, which seems strange; I have taken but one here, in daylight, in a dark hallway.

C. amatrix Hbn. I have only seen this occasionally here; all large, handsome specimens, like those from Southern swamps. One was secured after a twenty-foot climb up a hickory, the "catcher" holding on by his knees while he bottled the fly. Needless to say the "shinning" progress up the tree was slow and cautious.

C. epione Dru. Not rare; taken in apple orchards and among small oak undergrowth.

C. habilis Grt. Not rare; rests very quietly on large trunks, and is easily seen—by the initiated—and taken.

C. paleogama Gn. Most abundant; usually one-third of the day's catch; found in many varietal forms, the beautiful variety *phalanga* being the rarest. It is wonderful how difficult it is to see such a strikingly marked form as *phalanga*, but I usually rapped them up before I could detect them; while the uniformly colored normal form was readily detected at rest. I found this fly very restless, often flying up when I was two or three yards away, but after lighting again it could readily be bottled with average caution. I noticed with interest how often, especially in the afternoon, a moth of this species, startled from one tree and flying to another, would light directly on or very near another of the same species, startling the second and often several others away.

C. neogama S. & R. Quite common; frequently roused from the smooth brownish trunks of small dog-wood trees, with the color of which it closely harmonizes. Very wary when once startled.

C. subnata Grt. Frequent. I have never seen *piatrix* here, which seems odd.

C. robinsonii Grt. I have only taken it once here; have also taken it once near Charleston, S. C.

C. retecta Grt. and var. *flebilis* Grt. I found *flebilis* more

abundant and less wild than the typical *retecta*, though the latter was quite common. Have taken the former also in the Piedmont region of South Carolina There are several intergrading forms found here.

C. desperata Gn. Very common towards end of season (late August), rarer in July. Easily seen and easily captured; frequently, after clapping the bottle over one, it would have to be roused by moving the bottle against it. Even after being rapped up only ordinary caution is necessary for a second approach.

C. viduata Gn. (*mæstosa* Halst.) This handsome Southern giant I found quite frequently this summer, though it was not common. Its habits are the same as in the Southern swamps; it shows a preference for grey-barked trees, is not hard to see at rest, sits quietly and is not hard to bottle, and when startled by rapping often lights again on the other side of the same tree. The streets of Columbia, S. C., with their double and often quadruple rows of aged water and willow oaks and hackberry trees, are a paradise for *Catocalas*. A stroll down these shaded streets in August, with the mercury about 100 degrees, will reveal such a quantity of *C. viduata* and other nice *Catocalæ*, to say nothing of the swarms of *Apaturus*, *celtis* and *clyton*, and noctuids innumerable, and with all the conditions for easy capture so perfect that one day alone in such a place throws all other *Catocala* collecting into the shade. Here have I taken *viduata* in such profusion that the desire to capture seemed almost to pall, and there would I direct any one wishing to know what *Catocala* collecting is at its best.

C. lachrymosa Gn. Fairly common, in endless variety, and very wild; probably the wildest species. They often start up before the tree is closely approached, and a cautious chase from tree to tree often ends in their ascending out of reach. They seem to prefer dark-barked trees.

sappho Strk. I saw and captured two this summer, in September, and late in the evening; these are all I have seen here, and are smaller a trifle than the only other one I have seen alive taken in South Carolina. I found no

difficulty in bottling these, though I scarcely dared breathe as I slowly advanced the bottle.

C. insolabilis Gn. Quite common, though not hard to detect, and not very wild.

C. obscura Strk. Rare, or at least not easy to find; have taken about five here. They prefer large trees, and sometimes hide under the loose bark, and once I took one that had pitched in the grass.

Catocalas were very abundant this season; I often took fifty to sixty good specimens in a morning or evening's tramp. As usual I found the afternoon more productive than the morning. On hot days I found them plentiful in the morning, but usually they "roosted" high, and began to descend towards the roots in the afternoon, becoming more and more abundant towards dusk. I found day collecting more profitable than sugaring, and, after several attempts, gave up the latter for *Catocalas*. I have also found that medium sized oaks, with an abundant growth of small branches near the ground, such a growth as small white oaks frequently exhibit, were more thickly populated than bare trunks, and, on rapping such a tree, after vainly examining it, a half-dozen or more *Catocalas* would often start away. *Lachrymosa* and *viduata* seemed to prefer bare trunks. From August 4th until September 5th this year I took over 500 *Catocalas*, a large proportion being *C. palæogama*.

———o———

THE FOURTH OF JULY.

Collecting in the Cañon's Mouth.

By Henry Skinner.

We could not be said to be "seeking the bubble reputation even in the cannon's mouth," but were after butterflies, not to speak of moths and other insects. The 2nd of July found us in the "City of the Saints;" and, judging from the amount of noise, patriotism was rampant, and the racket increased every hour until the evening of the Fourth, when it gradually died away like a passing thunder-storm. On the 3d we went to Red Butte Cañon, back of Fort Douglas, and had fair success collecting, and retired that night and tried to sleep through the fearful din. The morning of the Fourth was bright and propitious, and we started early for the home of our good

friend G. Wesley Browning, who was to be our guide to his favorite collecting place, the City Creek Cañon, in the Wasatch Mountains, near Salt Lake City. After partaking of an excellent breakfast with our hospitable friend and his good wife we started for the cañon's mouth with our implements of war (on insects), ready for the fray. Thus far I have said "we," and I will stop a moment to explain who we were. The writer, from modest motives, can say nothing—his name will be found at the beginning of the article, but his companions are well known to the readers of THE NEWS. Mr. Philip Laurent, of Philadelphia, is a painstaking and careful collector, and has a really superb collection of moths and butterflies and also of Coleoptera, and his collections, for order and neatness, would be a revelation to many. Prof. A. J. Snyder, of Evanstown, Ill., is a most enthusiastic collector and camper, and his love for the "Rockies" makes them a magnet that he finds irresistible as each summer approaches. He claims to be able to "get over" sage brush faster than any living man and labors under the delusion that if he lives to be as old as Methuselah he will be able to untangle the genus *Argynnis*. Browning is a man that loves Nature in all her phases and it is a pleasure to know him. He has done excellent work, in spite of the fact that he is practically alone, and we all know the value of the sympathetic aid and encouragement of our entomological friends and companions. He is also an artist of ability and in the future will probably do all in his power to make the interesting fauna of his home better known. With good company, fine weather and a new field of work we enthusiastically looked forward to a day of rare pleasure and were not disappointed.

The cañon reminds one of our own Wissahickon, except that instead of hills its sides are mountainous, and the stream of ice-cold water runs over its rocky bed with great rapidity and in many places is white with foam and spray. In the damp places Papilios were very abundant and large bunches of them would be found standing side to side, sucking the moisture from the mud, and when disturbed would rise in great yellow clouds. Prof. Snyder took *eleven* specimens at one time, made up of *daunus*, *rutulus* and *nrymedon*, by placing

the net over them as they thus rested. The writer made a sweep of the net into a "cloud" and secured seven at one stroke. Two other species of Papilio, *indra* and *zolicaon*, were taken, but they were scarce. *Indra* and *zolicaon* were found flying over a narrow and shallow part of the stream at the "forks," where the stream divides. *Parnassius clodius* was occasionally seen and taken, but could not be said to be abundant. *Smintheus* was not seen, but Prof. Snyder in former years took it abundantly at Park City, Utah.

Pieris rapæ, *sleracea* and *occidentalis* not infrequently fell victims to our nets, and from time to time the green under side of *Anthocharis ausonides* would flash in the sun and the delicate *julia* would make its appearance in the open. Of the Nymphalidæ we saw and captured *Vanessa milberti* and the almost cosmopolitan *antiopa*; *Limenitis weidemeyeri* sailed leisurely by or rested on the tip of a branch, often too high for a successful stroke. *Grapta zephyrus* and *Satyrus paulus* were taken, but only in one or two specimens. Of the polygamous genus *Argynnis* we captured *snyderi*, *meadii*, *platina*, *leto* and *chitone*. *Melitæa acastus* was plentiful in places and *Phyciodes tharos* was taken. In the Lycænidæ we took *Chrysophanus helloides* and *zeroe*; *Lycæna lycea*, *acmon*, *melissa*, *glaucon* and *amyntula*. The only species of *Colias* was *eurytheme* var. *eriphyle*. Hesperidæ were scarce, and we only took *Eudamus nevada*, *Pamphila taxiles*, *Pholisora catullus* and *Nisoniades juvenalis*. *Epicallia virginalis* in its multitude of variations was quite abundant. We visited the cañon also on the 5th and 6th of the month, and then left for Silver Lake, further in the mountains, where we camped at 8,600 feet and collected from this elevation to the tops of the peaks. Snow was fifty feet deep in places. I hope Prof. Snyder or Mr. Laurent will write about this portion of our outing and the good things taken.

OCCURRENCE OF STAGMOMANTIS CAROLINA IN NEW YORK.

Prof. M. V. Slingerland.

I am just in receipt of a letter from Mr. H. F. Atwood, Rochester, N. Y., in which he states that "this past season I have taken a number of specimens of Mantids." I do not know as they are rare here but as I have never seen them before I

feel that perhaps I ought to speak of them. My home is on the northern outskirts of Rochester, and I found many of them about my house, and they were also taken about Charlotte and Summerville. I did not hear of any further South. Those that I observed were either green or light brown, apparently two varieties.

Early in the spring I found a cluster of the eggs on a twig that had been blown from a tree. I identified it but not to my satisfaction, for until I saw the perfect insect I had no idea of their being found here. The specimens I observed were good feeders and in my opinion they should be encouraged, as their diet was entirely insects."

Although this insect has doubtless been reared many times in this State, from eggs received from the South, as we have done here at the insectary the past summer from eggs received from New Mexico, yet I find but one recorded instance of such rearings. Glover has stated that "it has been successfully raised as far North as the Hudson River by bringing the egg-cases from the Middle States. Several cases were found fastened to the trees the next autumn, but after that they entirely disappeared." It is said that the eggs probably could not endure our northern winters. It will be noted that Mr. Atwood found an egg-case in Rochester in the spring, but there is nothing to indicate that the eggs were alive. Mr. Scudder in his "Catalogue of the Orthoptera of North America" recorded two species of Mantids, *chlorophaca* and *phryganoides*, from New York State, the former near Watertown, N. Y., and the latter from New York. Mr. Scudder just writes me that "no Mantidæ are known to live normally in New York. One of the two species I recorded was probably imported in packing from Florida; the other was also either an accidental occurrence or a mistake of locality. I have never heard of *Stagmomantis carolina*, our northernmost Mantid, from as far north as New York." I have asked Mr. Atwood to continue observations upon the insect to determine if it survives the winter and appears again in the same locality next year.

NOTE.—Mr. Atwood writes me further under date of October 31, 1899: "I have no doubt but what I will be able to get specimens for you next summer, because surely we cannot have as severe a winter this coming year as we had the past, and I have every reason to believe that these insects that I observed here hatched out near my house. There were so very many of them that it could not have been accidental, their coming here. I have also reason to believe that the eggs that I found in the mass in the spring were also alive, they having that appearance and being not very much unlike the egg of the grasshopper. The insect did well in our latitude, it being quite slender in July and August and reaching a strong and sturdy growth the latter part of September, their abdomens being decidedly corpulent."

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer for each number three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., DECEMBER, 1899.

THE object of describing new species of insects is to make them known to the scientific world, but this fundamental principle in many cases seems to be overlooked by some of our systematists who describe as species such slight variations, brought about by distribution, climate or other causes, and frequently from such insufficient material as to make it quite impossible to know what they have in mind or what they mean by their descriptions. Perhaps the entomologist of the future will be a being who spends all his spare time and money wandering over the earth seeking types. Some day, perhaps, these names that have crept and unfortunately will creep into our future lists of species will be weeded out, but at the expense of much valuable time and study, and it would have been better had they never been described. Where there is the slighest doubt about a single specimen supposed to be new it would be far better to wait for adequate material than to rush into print and make a synonym. More time should be given to careful collecting through a series of years with accurate data on all specimens particularly in one locality. If this were done many interesting problems could be solved. During the past summer one of our subscribers spent considerable time collecting certain species, and his work shows conclusively that two names will have to be merged into one. This is more scientific and useful than constructing two names out of nothing. Instead of the individual going around seeking types another plan might be inaugurated, and that is building a cairn where the n. sp. is taken and putting all the information, etc., in a steel tube which should have a screw cap and be buried in the cairn for the information of all students.

DEPARTMENT OF ECONOMIC ENTOMOLOGY

Edited by Prof. JOHN B. SMITH, Sc. D., New Brunswick, N. J.

Papers for this department are solicited. They should be sent to the editor Prof. John B. Smith, Sc. D., New Brunswick, N. J.

EPHESTIA KUEHNIELLA AND ACANTHIA LECTULARIA.—In connection with the note contributed by W. G. Johnson in the September number of the ENTOMOLOGICAL NEWS, it may be of interest for me to add that *Ephestia kuehniella* occurs in this Co' ay. I have seen it at several local mills and have been told by millers that it i known in other and distant parts of the country. How long it has been about Capetown I have been thus far unable to ascertain, but there seems to be no evidence of its being a newcomer. The mill people say it causes them some inconvenience, but is by no means a serious pest. The mill buildings here are, as a rule, well built and of brick, and a considerable measure of cleanliness prevails; the principal one at Capetown is shut down twice a year and given as thorough clean-out, particular attention being bestowed to dislodge all of the "web" in the spouts. I understand that similar methods prevail at the other important mills. Compared with many American establishments, our mills are small and there is, besides, a lack of that extreme rush and bustle that characterizes most everything in Yankee-land. Perhaps it is owing to these circumstances that the flour moth is not very troublesome. No parasites have emerged in my rearing boxes, but there was no lack of *Tribolium* in the spouts which I had dragged for my material.

Mr. Johnson refers to the fumigation of buildings with hydrocyanic acid gas. I have carefully refrained from advocating the operation but a number of the foremen connected with the orchard fumigation at work in different parts of the colony, to my knowledge oblige their fruit-growing patrons by treating sleeping apartments in the dwellings. The results are said to be all that is desired. At my suggestion the Cape Government Railways some months ago adopted this fumigant to "disinfect" their rolling stock. For some years the problem of "what to do" sorely troubled even the head, of the department, and correspondence with railway managements in America and elsewhere elicited no information of value. Finally a measure involving the exhaustion of air from the coaches after enclosing them in a special chamber was proposed and a requisition sent to England for the necessary iron work; it was at this juncture that hydrocyanic acid gas was brought to the rescue. The simplicity and efficacy of the treatment was demonstrated by the fumigation of eight particularly bad coaches and by laboratory experiments it was shown that no injury befel any of the fittings, cloth,

leather or metal; highly polished steel, it is true, did become slightly blued, but only when exposed to a far greater density of the gas than what proved fatal to even the eggs of the insect. The relief of the authorities when the head trimmer reported that not a single living insect was discovered among the multitude gathered by his workmen during their careful inspection of the treated coaches was really amusing, but the personally expressed thanks of the general manager, to say nothing of the calibre of the cheque left behind, was convincing of their appreciation of the service and of the past gravity of the situation. A corps of fumigators now takes charge of the through trains as they arrive from the north and for many months there has been but a single complaint; this one failed to be substantiated, for although the coach accused was immediately side tracked and overhauled no living bugs were found. Out of justice to the railroad management I feel bound to add that the infested condition of the coaches was by no means due to neglect or indifference, and that the abundance of the pest may be safely attributed to circumstances of climate and travel. The climate is a warm one, the train journeys are very long, and it is usual for travellers to carry their own bedding. The cape excels in at least three productions, diamonds, gold and bed-bugs.

Notwithstanding the potency of hydrocyanic acid gas as an insecticide, I cannot say that I am in favor of recommending it to the public for the destruction of house or granary pests. It is too terribly dangerous to trifle with and the least infringement in the necessary precautions may mean death to someone. Cyanide is now largely used for the extraction of gold and, despite of the utmost care in its employment, I am told that fatal accidents to native employees are not infrequent. My suggestion to anyone who contemplates using the gas in a dwelling is to first administer a slight amount of solid cyanide to an animal. Most persons will be so appalled and horrified by the suddenness of the end that they will have no desire remaining to assume risks in the house. I have repeatedly inserted small particles in bits of dry meat and laid these as baits for feline disturbers of my evening labors, and I am not exaggerating when I say that, as a rule, the creatures drop dead almost instantly and often with the meat still in their mouths; seldom do they die more than three or four feet from where the bait was laid. In house fumigation it is not danger to the operator that I fear, but such an happening as an unexpected intrusion by a party all unconscious of the danger. Accidents of such a nature are improbable, sure enough, but they are possible, and when the chances favor fatal consequences even remote possibilities should have great weight. The story has reached me that not long ago a native laborer, wholly unaware of his danger, sought to enter one of the railway coaches undergoing treatment. It seems that he came up unobserved and, as luck would have it, went straight to the only un-

locked door in the train. One of the guards heard the door open, shouted just too late, but rushed up in time to drag the man out by the heels. Fortunately the gas was largely spent, but although the man was a stalwart Kafir the effects of the short exposure were such as to thoroughly frighten all who saw him. Now the operators employed at the railway are exceptionally careful workmen, in fact they were selected largely because of habitual prudence, and this near approach to an accident simply illustrates how with what appears all necessary precautions there is a grave element of risk in such operations. The doors to the carriages are ordinarily locked the key holes plugged, but at the last moment something was found to be defective with the lock of the door in question, and the watchmen chanced to be facing another way as the bare footed native came up. Might not an analagous circumstance occasionally happen in mills and houses, where at the best the risks are immensely greater? It is not as if there were no alternative measures applicable for granary and house insects and to me it seems a plain case of prudence dictating to let well enough alone. Hydrocyanic acid gas for orchard fumigation and for the disinfection of nursery stock in specially devised buildings is right enough, as it is also under proper precautions for the treatment of railway carriages that must be put into use again within a few hours, but to encourage its general use in closed buildings seems going to far. If to be used at all in dwellings, granaries and the like I think that all of the operations should be under the personal superintendence of a responsible party licensed by law. We have had no accident in the colony in three years' work with the gas in special chambers and in the orchard, but when disinfecting a few rooms at a boarding school one of the orchard operators gave himself and several others violent headache and nausea. One after another he told me he had to give up and go lay down. The bad effects were all the result of ill-considered procedure, but if an experienced fumigator makes mistakes in judgment what might not be expected from an ignorant beginner?

CHAS. P. LOUNSBURY.

Cape Town, South Africa, October 10, 1899.

NOTE on *Telea polyphemus*—Cr., etc—Since it appears that *T. polyphemus*—Cr. has not been reported from Mexico I wish to put on record here the capture of a ♂ by Prof. Luis Murillo at Jalapa, V. C., this month (April). *Eacles imperialis*—Drury has come to stay though still very rare in Cuernavaca, Mor., and in Jalapa, V. C. And *Actias luna*—*L.* is getting settled at Jalapa and (?) Orizaba, V. C. Although the last two moths are reported in the Biologia, C. A., Prof. Murillo declares they have been in evidence in Jalapa for only two or three years The city is almost entirely shut out from the north and at an elevation of 5,000 feet.

O. W. BARRETT, Museo, Tacubaya, D. F., Mexico.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

DR. HERMAN STRECKER has completed his valuable index to the species in Kirby's Lepidoptera Heterocera, Vol. 1, and is now preparing a list of the 417 types in his collection. This will be Supplement III to his Lepidoptera Rhop. et Heterocera. These publications may be obtained from the author.

MR. LANCASTER THOMAS has returned from his annual trip to Cranberry, N. C., and reports that the collecting was unusually poor owing to the very dry weather during the summer.

DR. WILLIAM BARNES was fairly successful in his collecting trip to Southern Arizona.

PROF. H. A. PILSBRY collected a lot of interesting *Cychrus* at Clingman's Dome, Blount Co., Tenn. They are now in the fine collection of Mr. H W. Wenzel, of Philadelphia.

I NOTICE in the report of the American Entomological Society, held June 22d, that you reported *Melitaæa harrisii* as having been taken at Lopez, Sullivan county, Pa. I took one good specimen of same, June 15th, at Plymouth, Luzerne county, Pa., but saw no others. This is the first specimen I have taken in my four years collecting in this vicinity and have not heard of its being taken by anyone else around here.

I took one good fresh specimen of *Euptoieta claudia* in September, 1898 and another in September, 1899. ALFRED E. LISTER.

NOTES ON EXYRA ROLANDIANA.—While looking through some old volumes of Psyche recently I noticed in II., p 39, the description and an account of the habits of the larva of *Exyra rolandiana* by Mr. Thaxter. The species is quite common in Durham wherever its food plant (*Sarracenia*) flourishes,and the larvæ have been found not in the leaves as described by Mr. Thaxter, but within the flowers and buds the last of May and first of June. The imago appears the last of June and first of July, and has been observed resting in the leaves of its food plant.

Mr. Thaxter says that the larva is "delicate and difficult to rear" but such was not my experience with those taken well along toward maturity. About half a dozen were collected the last week in May and placed in wide mouthed vials with a piece ef the ovary of the pitcher plant flower, securely plugged with cotton and left to themselves. Most of them completely finished the food that was given them and one or two were dwarfed for lack of more, but every one of the lot produced a perfect imago. I would recommend collectors who have access to a swamp in which pitcher plant

grows to collect and rear these larvæ for perfect specimens of this dainty little noctuid are acquisitions to any collection.

W. F. FISKE.

AN APPEAL IN BEHALF OF ENTOMOLOGY AND KINDRED SCIENCES.

In the interest of natural history it would be a good plan if every naturalist throughout the United States would petition their representatives in Congress to have paragraph 666 of the tariff law of 1897 amended, so that specimens of natural history for scientific collections be admitted free of duty, whether intended for private or public use. The paragraph in question comes under the "free list" and reads as follows: "Specimens of natural history, botany and mineralogy, when intended for scientific public collections and not for sale."

Natural history, especially entomology, merits all the encouragement possible and an excellent way to further an interest in it would be to remove the barrier from the private student. All who read this are earnestly requested immediately to petition their representatives at Washington urging that the section in question be amended and that without delay. EDW. A. KLAGES.

IN studying the relations between the species of the genus *Catocala* I acquired the conviction that for the solution of the problem it is indispensable to resort to experiments with elevated and reduced temperature after Standfuss. Some results from the breeding of European species are already obtained. UNfortunately the most interesting species, those with the black hind-wings, are inaccessible to the European experimenter, the eggs of American catocalas not being on sale.

I determined therefore, by your mediation, to address to the members of the American Entomological Society and others a request to procure for me the living eggs of any species of *Catocala*, which are so abundant in the United States. The black species are especially desired, the indication of the food-plant is also necessary.

In exchange I can offer many species (well prepared) of my collection of Russian Lepidoptera. St. Petersburg, Crimean, Siberian.

NICHOLAS KUSNEZOW, Physiological Laboratory of University, St. Petersburg, *Russia*.

I HAVE had the pleasure of collecting Coleoptera a few days in Tioga county, Pennsylvania, during this summer (1899), and a few notes I have kept that may be of interest to other collectors. One pine tree trap, cut early in May, produced in four months the following catch: *Hylobius pales*, very abundant. *Pissodes strobi*, not abundant, *Eurymycter fasciatus*, very abundant. *Tamicus pini*, very plentiful. *Hylurgops pinifex*, not abundant. *Hister lecontei*, in

great numbers. *Pytho deplanatus*, very abundant. *Monohammus titillator*. *M scutellatus* and *M. confusor* were almost in swarms, but *Monohammus maculosus* very scarce. In July and August *Ac-Acanthocinus obsoletus* and *Liopus variegatus* were taken in small numbers. *Asemum atrum*, quite plenty in August, *Xylotrechus undulatus*, but a few good specimens and *Rhagium lineatum* was often present. *Clerus quadriguttatus*, *C. nigrfrons* and *C nigripes* could be taken by the dozens. Later a good number of *Chrysobothris*, *dentipes* and *C. femorata*, were taken. So all of this catch was from a few pine logs carefully watched, and often rolled over on the grass. J. C. WARREN, Crooked Creek, Pa.

THE Zoological Department of the Massachusetts Agricultural College is doing good work in Entomology and has a strong teaching force. Prof. C. H. Fernald, Ph D, being ably assisted by Prof. R. S. Lull, M. S., and his son, Dr H. F. Fernald, who for ten years past was Professor of Zoology in the Peunsylvania State College and for two years Economic Zoologist.

THOSE who have changed their addresses since reporting for the Entomologists' Directory will kindly notify the undersigned at once, as the copy will soon be ready for the printer. Those that miss the opportunity to have their names in the Directory will surely regret it. It costs you nothing. HENRY SKINNER,
Box 248, Philadelphia.

Entomological Literature.

COMPILED BY P. P. CALVERT.

Under the above head it is intended to mention papers received at the Academy of Natural Sciences of Philadelphia pertaining to the Entomology of the Americas (North and South). Articles irrelevant to American entomology will not be noted. Contributions to the anatomy, physiology and embryology of insects, however, whether relating to American or exotic species, will be recorded. The numbers in HEAVY-FACED TYPE refer to the journals, as numbered in the following list, in which the papers are published; * denotes that the paper in question contains descriptions of new North American forms. Titles of all articles in foreign languages are translated into English; usually such articles are written in the same language as the title of the journal containing them, but when such articles are in other languages than English, French, German or Italian, this fact is indicated in brackets.

1. Proceedings of the Academy of Natural Sciences of Philadelphia, 1899, part ii.—3. The American Naturalist, Boston, Oct., '99.—5. Psyche, Cambridge, Mass., Nov., '99.—7. U. S. Department of Agriculture, Division of Entomology, Washington; publications of, '99.—8. The Entomologist's Monthly Magazine, London, Nov., '99.—9. The Entomologist, London, Nov., '99.—10. Nature, London, '99.—12. Comptes Rendus, l'Academie des Sciences, Paris, Sept. 25, '99.—15. Biologia Centrali-Americana, London, pt. cxlvii, April; pt. cxlviii, June;

pt cxlix, Aug. '99,—**21.** The Entomologist's Record, London, Oct.' 15, '99.—**26.** Appleton's Popular Science Monthly, New York, Nov. '99.—**35.** Annales, Société Entomologique de Belgique, xliii, 9, Brussels, Oct. 4, '99.—**41.** Entomologische Nachrichten, xxv, 20, Berlin, Oct., '99 —**84.** Insekten Börse, Leipsic, '99.—**118.** Memoirs and Proceedings, Manchester [England] Literary and Philosophical Society, xliii, '98-'99; rec'd, Oct. 17, '99.

The General Subject—Axenfeld, D. Some observations on the sight of Arthropods, Archives Italiennes de Biologie, xxxi, 3, Turin, Sept. 23, '99.—Bordage, E. On a particular mode of protection of the appendages in course of regeneration after artificial section among insects. **12**—Carret, A. M. F. Guillebeau and his entomological works (cont.), L'Echange Revue Linnéenne, Lyon, Oct., '99 —Coupin, H. Singular mode of locomotion in insects, figs., La Nature, Paris, Sept. 30, '99.—Enderlein, G. Contribution to knowledge of the structure of the cross striped muscles of insects, 1 pl. Archiv für Mikroscopische Anatomie und Entwicklungsgeschichte, lv, 1, Bonn, Oct. 11, '99.—Heuneguy, L. F. The modes of reproduction of insects, Bulletin, Société Philomathique, Paris (9), i, 2, '99.—Heymons, R. On W. M. Wheeler's "Anemotropism and other tropisms in Insects," Zoologischer Centralblatt, Leipsic, Sept. 26, '99.—Knuth, P. Handbuch der Blütenbiologie. II Band: Die bisher in Europa und in arktischen Gebiet gemachten blütenbiologischen Beobachtungen, 2 Teil: Lobeliaceæ bis Gnetaceæ. Leipzig Verlag von Wilhelm Engelmann. 1899. figs., 705 pp.—Lenecek, O. Jumping beans, Verhandlungen. Naturforschenden Vereins in Brünn. xxxvi, '98.—Plateau, F. Vision in *Anthidium manicatum* L., **35**—Poulton, E. B Report of the Hope Professor of Zoology [on the Entomological collections, etc., at Oxford], Eleventh Annual Report of the Delegates of the University Museum for 1898, Oxford.—Schwarz, E. A. List of insects hitherto known from the Pribilof Islands, in: The Fur Seals and Fur Seal Islands of the North Pacific Ocean, by David Starr Jordan. Part 3, Washington, Government Printing Office, 1899.—Sharp, D. Insects, part II. See review, *post*.

Economic Entomology.—Anon. The investigation of the malarial parasite, **10**, Oct. 5.—Anon. Some means for combatting *Schizoneura lanigera*, Wiener Illustrirte Garten-Zeitung, Oct., '99.—Bancroft, T. L. On the metamorphosis of the young form of *Filaria bancrofti* Cobb (*F. sanguinis hominis* Lewis, *F. nocturna* Manson) in the body of *Culex ciliaris* L., house mosquito of Australia. Abstract of Proceedings, Royal Society of New South Wales, Sydney, June 7, '99.—Celli, A., and Casagrandi, O. On the destruction of mosquitoes: contribution to researches with mosquito-killing substances, Centralblatt für Bakteriologie, Jena, Oct. 14, '99.—Chittenden, F. H. The squash-vine borer (*Melittia satyriniformis* Hbn), figs., **7**, circular

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Insects. Part II. Hymenoptera continued (Tubulifera and Aculeata), Coleoptera, Strepsiptera, Lepidoptera, Diptera, Aphaniptera, Thysanoptera, Hemiptera, Anoplura. By David Sharp. London: Macmillan and Co., Limited. New York: The Macmillan Co. 1899, 8vo, pp. xii, 626; 293 figs. Received from John Wanamaker.

This, the sixth volume of the Cambridge Natural History, edited by S. F. Harmer and A. E. Shipley, concludes the account of the insects begun in Vol. V. This latter, published in 1895, dealt with Peripatus and the Myriapods by different authors, and devoted 483 pages to a general account of Insects and of the orders Aptera, Orthoptera, Neuroptera (in the wide sense), and the Hymenoptera Sessiliventres and Petiolata-Parasitica.

Those who know Dr, Sharp's previous volume need only be told that the present one is truly a continuation. By its completion we have now an excellent series of modern books of reference, none of which deals with precisely the same aspect of entomology, although they must and do repeat many facts of primary importance. Thus for a general sketch we have Carpenter's "Insects, their structure and life," noticed in the November News, for an introduction to taxonomy Comstock's "Manual:" Packard's "Text Book of Entomology" is a store house for anatomy and physiology; Smith's "Economic Entomology" presents the applied science; while Sharp's "Insects" deeply interests us by the prominence which is given to habits.

Probably most persons will be puzzled, like ourselves, at the order in which the different groups of insects are discussed by Dr. Sharp. In a general way that order corresponds to increasing complexity, but the position of the Hymenoptera in particular seems abnormal.

As our readers may be interested in having presented to them an

abridgment of the classification of the larger orders as employed in this volume, we add the following table:

- Hymenoptera
  - Tubulifera. . . . Chrysididæ.
  - Aculeata . . .
    - Anthophila.
    - Diploptera.
    - Fossores
    - Heterogyna (Formicidæ).
- Coleoptera . . . . .
  - Lamellicornia.
  - Adephaga or Caraboidea.
  - Polymorpha.
  - Heteromera.
  - Phytophaga.
  - Rhyncophora.
  - Strepsiptera.
- Lepidoptera. . . Rhopalocera and Heterocera.
- Diptera . . . . . .
  - Orthorrhapha Nemocera.
  - Orthorrhapha Brachycera.
  - Cyclorrhapha Aschiza.
  - Cyclorrhapha Schizophora.
  - Pupipara.
- Hemiptera . . . . .
  - Heteroptera . . .
    - Gymnocerata.
    - Cryptocerata.
  - Homoptera . . .
    - Trimera
    - Dimera.
    - Monomera.
  - Anoplura.

The most interesting part of the book is probably the section on the Hymenoptera, by reason of the striking, various and wonderful habits of these insects. There are, however, many similar observations recorded for other groups and they prove most enticing reading when one opens the book at random. The illustrations are as delightfully clear and clean as is the typography, so that the book is pleasing in every way, and we must expect weight in a volume which treats of insects. Author and readers are alike to be congratulated on the results of Dr. Sharp's labors amidst the bewildering riches of entomology. P. P. C.

DOINGS OF SOCIETIES

MINUTES OF NEWARK ENTOMOLOGICAL SOCIETY.

Regular meeting was held at Town Hall, Sunday, October 8th, at 3:00 p. m. Vice President Kemp presided and eight members were present, including Prof. Smith.

Mr. Angleman and Mr. Buchholz reported *Pieris protodice* common near Newark.

Mr. Weidt exhibited a series *Cleora umbrosaria*, a Geometrid, showing the intergrades from the dark to the light forms. The ♀ as a rule were lighter. The insect was very common at Forrest Hill near Newark, on September 19th, and were taken on the trunks of hemlock trees. From eight to ten specimens were seen on one tree.

Mr Buchholz found *Schinia brevis* plentiful, locally, near Elizabethport, September 9th.

Mr. Kemp reported the capture of *Pseudanthroecia coracias* at Elizabeth, July 7th.

Mr. Weidt donated a pen to the society as the last one had been placed on the retired list on half pay, having been in service for over two years. Meeting adjourned A. J. WEIDT, Secretary.

A meeting of the American Entomological Society was held October 26th. Mr. C. W. Johnson, Vice President, in the chair. Dr. Skinner presented 178 insects from Utah. Mr. Liebeck stated that the society had purchased 206 specimens, 73 species of Coleoptera from the Griffith collection. Dr. Skinner exhibited the mouth parts of the *Carabidæ* from which illustrations had been made for Dr. Horn's paper on the family These specimens were originally gummed on card board but had been lately remounted on glass microscope slides by Prof John B. Smith. They are now in appropriate boxes and all numbered in accordance with Dr. Horn's paper. Mr. Ulke of Washington, who was present and by the way was the first member elected to the society, spoke of the great value of Dr Horn's work and also complimented Prof. Smith for putting the material in a condition to be available for study for an indefinite period. A unanimous vote of thanks was tendered Prof. Smith for his valuable work. Mr. Laurent exhibited the *Coleoptera* collected by Prof. A. J. Snyder and himself in Utah, principally at the head of the big Cottonwood Canon. The catch was a good one considering that less than 100 hours collecting was had. The speaker was surprised to see such a small amount of variation in *Cicindela longilabris*, *Lucanus mazama*, *Gaurotes cressoni*, *Eleodes extricata* and *Pristoselis* were specially mentioned; the latter were abundant on thistles. The photographs taken on the trip were shown. Dr. Calvert exhibited the *Odonata* collected by Dr. Skinner in Utah. There were thirty-two specimens representing fifteen species. A pair of *Somatochlora semicircularis* in fine condition were mentioned. *Plathemis subornata* ♂, ♀, are much

like the Eastern species. They differed in that in the East the sexes are marked differently while the Western ones are alike. *Libellula forensis* was said to be the Eastern representative of *L. pulchella*. *Ophigomphus occidentis* was taken. The difficulties of this genus were mentioned *Enallagma calverti* was said to be very close to *annexum*. The differences in the appendages were described. The sexes of *calverti* were taken in coitu. Some New Jersey specimens of *Odonata* received from Mr. Davis were also shown. Two specimens of what was supposed to be *Argia translata* were taken at New Foundland, N. J., and were of peculiar interest because they correspond most closely with specimens from Arkansas, Texas and Mexico. The types came from Venezuela Dr. Skinner exhibited the Lepidoptera taken by himself in Colorado and Utah during the past summer. Mr. Johnson exhibited the *Diptera* taken by Dr. Skinner in Utah and said there was a new species of *Symphoromyia* and a *Tipula* not yet determined. *Stratiomyia nevadæ* ♀ was of much interest. The differences between the sexes were pointed out. The greater part were Pacific slope species. *Dasyllis columbica* was of interest because it mimics the bumble bee which has fulvous pile the same as the fly. The flies collected by Mr. Laurent were also exhibited.

Mr. Ulke said he did not believe in rare species. It means ignorance of locality, time or habits. Say described two water beetles received from Melsheimer, as *Hydrocampus rotundatus*. Dr. Horn did not notice these in his studies and it subsequently turned up in Massachusetts. Mr. Ulke also found them in some small puddles and took 50 or 60 in a day. A small species of *Silphidæ*, *Pinodytes cryptophagoides* agreeing with Mannerheim's specimens from Alaska was also taken in the woods near Washington, D. C., and was found in a deep hole near a stump. It is a blind species and is found by sifting. Mr. Wenzel stated that his son had found a *Pselaphus* new to his collection, in the roots of sedge His experience in sifting and finding rare species was given. He corroborated what Mr. Ulke said about so called rare species.

DR. HENRY SKINNER, Recorder.

At the October meeting of the Feldman Collecting Social held at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth street, Philadelphia, twelve members were present.

Mr. Johnson exhibited his collection of Chironomidæ, containing the following number of species from New Jersey: *Chironomma*, 16; *Cricoptopus*, 3; *Camptocladius*, 1; *Orthocladius*, 2; *Eurycnemus*, 1; *Tanypus*, 8; *Ceratopogon*, 23; *Heteromyia*, 1; a total of 55.

Prof. J. B. Smith stated the probable existence of many more species of this family in New Jersey than were represented in the above list. Very little is known of their early stages and while the larvæ are said to live on decaying vegetable matter in water, there is one

species, *Cricoptopus sylvestris* which is injurious to vegetation, the larvæ mining the leaves of the water lily, *Victoria regiæ*.

Mr Johnson referred to a former commmunication on spirally girdled hickory twigs, and stated he had since reared two specimens of *Heterachthes quadrimaculatus* therefrom.

Mr. H. Wenzel exhibited his collection of Scydmænidæ and Pselaphidæ containing about 150 species and 900 specimens. Over 80 species were from the vicinity of Philadelphia, 79 of which occur in New Jersey, although he believed all will eventually be found in both Pennsylvania and New Jersey.

Prof Smith called attention to a collection of the mouth parts of Carabidæ on which Dr. Horn's classification of that family was based. He had undertaken the mounting of these specimens on microscopic slides, the specimens being originally pasted on card board. In every instance the specimen was simply named generically. The slides will be arranged in boxes, the latter numbered to correspond to the plates of Dr. Horn's paper, and each slide is numbered the same as the corresponding figure on the plates. He stated that the figures are not exact, the author bringing out only certain salient features of the mouth parts and in the speaker's opinion thereby overlooking other important characters.

A vote of thanks was extended Prof. J. B. Smith for the elegant collation given the members at the last meeting.

Dr. Skinner related the experiences of his recent trip to the Wasatch Mountains, Utah, in company with Messrs. Snyder and Laurent.

WILLIAM J. FOX, Secretary.

Entomological News

AND

Proceedings of the Entomological Section

OF THE

Academy of Natural Sciences

OF

PHILADELPHIA.

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VOLUME X, 1899.

EDITOR:

HENRY SKINNER, M. D.

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PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE.
1899.

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